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1 Professional Experience

Associate Professor (2013-present; Assistant Professor: 2009-2013) Department of Genetic Medicine; Weill Cornell Medical College (New York, NY).

Associate Professor (2013-present; Assistant Professor: 2011-2013) Institute for Computational Biomedicine and Physiology, Biophysics, and Systems Biology Program; Weill Cornell Medical College (New York, NY).

Associate Professor (tenured 2011-present; Assistant Professor: 2006-2011) Department of Biological Statistics and Computational Biology; Cornell University (Ithaca, NY).

Postdoctoral Research Associate (2003-2005) Center for Population Biology; University of California at Davis (Davis, CA).

Postdoctoral Research Associate (2000-2002) Department of Biology; Florida State University (Tallahassee, FL).

2 Education

Ph.D. (2000) Department of Ecology and Evolutionary Biology; Yale University (New Haven, CT).

B.A. (1994) University of Pennsylvania (Philadelphia, PA).

3 Extramural Funding - PI or Lead Co-PI

1. **NIH (R01)** Integrative-omics network model of the disordered COPD small airway epithelium (Co-PIs: Mezey and Crystal); National Heart, Lung, and Blood Institute: 08/15/14 - 06/30/18.

2. **NSF COSciN:** Cornell open science network (Lead Co-PI: with PI: Foster); Infrastructure, Innovation and Engineering Program: 01/01/15 - 12/31/16.

3. **NSF** The genetic basis of transgressive variation in rice (Lead Co-PI with PI: McCouch); Division of Integrative Organismal Systems: 09/20/10 - 08/31/15.
4. **NSF** A Bayesian framework for analyzing genetic and gene expression architecture of complex phenotypes (PI: Mezey); Population and Evolutionary Processes Cluster: 09/01/09 - 08/31/12.
5. **Qatar National Research Fund** Development of a database of Mendelian disease variants in Qatar and an inexpensive technology for genetic testing (Lead PI: Mezey); NPRP 7th Funding Cycle: 04/01/15 - 03/31/17.
6. **Qatar National Research Fund** Identification and characterization of genomic alterations and regulatory mechanisms of ovarian carcinoma progression (Co-PIs: Mezey and Tabrizi); NPRP 4th Funding Cycle: 01/01/11 - 12/31/14.

4 Extramural Funding - Co-Investigator or Allocated Funds

1. **NIH (R01)** In Vivo Biomarker that Identifies Waterpipe Smoking-Related Lung Health (Co-Investigator with PI: Crystal); National Institute of Dental and Craniofacial Research: 09/01/16 - 08/31/19.
2. **Cystic Fibrosis Foundation** Assessment and Gene Repair of Human CF Airway Basal Stem/Progenitor Cells (Co-Investigator with PI: Crystal); 07/01/16 - 06/30/17.
3. **NIH (R56)** Biology of the Oral Epithelium of E-Cigarette Smokers (Co-Investigator with PI: Crystal); National Institute of Dental and Craniofacial Research: 03/03/16 - 02/28/18.
4. **NSF** Quantitative trait locus editing for crop improvement (Funds Allocated to Mezey Lab; PI: Bogdanove); Plant Genome Research Project: 05/01/15 - 04/30/19.
5. **NIH (U01)** HIV+ alveolar macrophage oxidant-mediated apoptosis of pulmonary endothelium (Co-Investigator with PI: Crystal); National Institute on Drug Abuse: 09/26/13 - 07/32/18.
6. **NIH (R01)** HIV-related accelerated aging of the airway epithelium (Co-Investigator with PI: Crystal); National Heart, Lung, and Blood Institute: 05/22/13 - 02/28/18.
7. **NIH (U01)** Disrupted adenovirus serotype 5-based anti-cocaine vaccine (Co-Investigator with PI: Crystal); National Institute on Drug Abuse: 08/01/12 - 05/31/17.
8. **Qatar National Research Fund** A pilot study of premarital screening in the qatar population for all mendelian traits by exome sequencing (Co-Investigator with PI: Crystal); NPRP 5th Funding Cycle: 11/01/12 - 10/31/16.
9. **NIH (R01)** COPD Metabolome, Smoking oxidants and aberrant ciliated cell function (Co-Investigator with PI: Crystal); National Heart, Lung, and Blood Institute: 04/15/12 - 02/28/17.
10. **NIH (R01)** Overlapping airway basal cell transcriptome reprogramming in COPD and lung

cancer (Co-Investigator with PI: Crystal); National Heart, Lung, and Blood Institute: 01/01/11 - 03/31/16.

11. **NIH (P50)** Impact of BDNF genotype and stress on learning and brain development (Co-Investigator with Center Grant PI: Casey); National Institute of Mental Health: 12/01/07 - 11/30/12.

12. **NIH (R24)** Tools for genetic and genomic studies in the dog (Co-Investigator with PI: Acland); National Institute of General Medical Sciences: 12/01/07 - 11/30/11.

13. **NIH (R01)** Statistical, computational, and experimental methods for enabling association mapping in structured populations (Co-Investigator with PI: Bustamante); National Institute of General Medical Sciences (via joint NSF Division of Mathematical Sciences initiative): 07/01/06 - 06/30/11.

5 Research Group Publications

1. Ramstetter, M., Blangero, J., Mezey J. Williams A. 2017. Performance assessment of relatedness inference methods using genome-wide data from thousands of relatives within large pedigrees. *submitted*.

2. Ju J., Mezey J. 2017. PICAPLOT: A tool for identifying cryptic covariates from genome-wide gene expression data. *submitted*.

3. Ju J., Shenoy S., Crystal R. Mezey J. 2017. An independent component analysis confounding factor correction framework for identifying broad impact expression quantitative trait loci. *submitted*.

4. McCouch S., Wright M., Tung C-W., Maron L., McNally K., Fitzgerald M., Singh N., DeClerck G., Agosto-Perez F., Korniliev P., Greenberg A., Naredo M., Mercado S., Harington S., Shi Y., Branchini A., Kuser-Falcao, P., Leung, Ebana K., Yano M., Eizenga G., McClung A., Mezey J. 2016. The power of population-specific genome-wide association study (GWAS) mapping in rice (*Orzya saliva*) with an open access resource. **Nature Communications** 7:10532 PMID: 26842267.

5. Rodriguez-Flores J., Fakhro K., Agosto-Perez F., Vincent T., Robay A., Malek J., Suhre K., Chouchane L., Badii R., Al-Marri A., Khalil C., Zirie M., Jayyousi A., Salit J., Clark A., Crystal R., Mezey J. 2016. Indigenous Arabs are descendants of the earliest split from ancient eurasian populations. **Genome Research** 26:151-162 PMID: 26728717.

- *Genome Research Feb 2016 Cover*

- *Press coverage in Genome Web, Genome Top News, Phys.org, and others*

6. Hoffman G., Mezey J., Schadt E. 2014. lrgpr: Interactive linear mixed model analysis of genome-wide association studies with composite hypothesis testing and regression diagnostics in R. **Bioinformatics** 30:3134-3135 PMID: 25035399.

7. Gao C., Tignor, N., Salit J., Strulovici-Barel Y., Hackett N., Crystal R., Mezey J. 2014. HEFT:

eQTL analysis of many thousands of expressed genes while simultaneously controlling for hidden factors. **Bioinformatics** 30:369-376 PMID: 24307700.

8. Hoffman G. 2013. Correcting for population structure and kinship using the linear mixed model: theory and extensions **PLoS One** 8:e75707, PMID 24204578.

9. Rodriguez-Flores J., Fakhro K., Hackett N., Salit J., Fuller J., Agosto-Perez F., Gharbiah M., Malek J., Zirie M., Jayyoussi A., Badii R., Al Marri A., Chouchane L., Stadler D, Mezey J.*, Crystal R.* 2014. Exome sequencing of the qatari population identifies unique risks for mendelian disorders. **Human Mutation** 35:105-116, PMID 24123366.

- **Co-senior authors*

10. Mahdi R., Mezey J. 2013. Sub-local constraint-based learning of Bayesian networks with a mutual dependence criterion. **Journal of Machine Learning Research** 14:1563-1603.

11. Hoffman G., Logsdon B., Mezey J. 2013. PUMA: a unified framework for penalized multiple regression analysis of GWAS data. **PLoS Computational Biology** 7:e1003101, PMID: 23825936.

12. Rodriguez-Flores J., Salit J., Fuller J., Omberg, L. Hackett R., Malek J., Crystal R., Mezey J. 2012 Exome of only seven qataris identifies potentially deleterious variants in the qatari population. **PLoS One** 7:e47614, PMID: 23139751.

13. Omberg L., Salit, J., Hackett N., Fuller J., Matthew R., Chouchane L., Rodriguez-Flores J., Bustamante C., Crystal G., Mezey J. 2012. Inferring genome-wide patterns of admixture in Qataris using fifty-five ancestral populations. **BMC Genetics** 13:49, PMID: 22734698.

- *Selected as an Editor's pick*

14. Mahdi R., Wang, G., Strulovici-Barel Y., Salit J., Hackett N., Crystal R., Mezey J. 2012. Empirical Bayes conditional independence graphs for dense regulatory network recovery. **Bioinformatics** 28:2029-2036, PMID: 22685074.

15. Logsdon B., Hoffman G., Mezey J. 2012. Mouse obesity network reconstruction with a variational Bayes algorithm to employ aggressive false positive control. **BMC Bioinformatics** 13:53, PMID: 22471599.

16. Brisbin A., Cruickshank J., Moise N., Gunn T., Milano A., Bustamante C., Mezey J. 2011. Fast, exact linkage analysis for categorical traits on arbitrary pedigree designs. **Genetic Epidemiology** 35:371-380, PMID: 21520271.

17. Logsdon B., Mezey J. 2010. Gene expression network reconstruction by convex feature selection while incorporating genetic perturbations. **PLoS Computational Biology** 6:e1001014, PMID: 21152011.

18. Brisbin A., Weissman M., Fyer A., Hamilton S., Knowles J., Bustamante C., Mezey J. 2010. Bayesian linkage analysis of categorical traits for arbitrary pedigree designs. **PLoS ONE** 5:e12307, PMID: 20865038.

19. Logsdon B., Hoffman G., Mezey J. 2010. A variational Bayes algorithm for fast and accurate multiple locus genome-wide association analysis. **BMC Bioinformatics** 11:58, PMID: 20105321.

6 Collaborative Publications

1. Strulovici-Barel Y., Staudt M., Krause A., Gordon C., Tilley A., Harvey B., Kaner R., Hollmann C., Mezey J. , Bitter H., Pillai S., Hilton H., Wolff G., Stevenson C., Visvanathan S., Fine J., Crystal R. 2016. Persistence of circulating endothelial microparticles in COPD despite smoking cessation. **Thorax** [Epub ahead of print] PMID: 27462120.

2. Fakhro K., Staudt M., Ramstetter M., Robay A., Malek J., Badii R., Al-Marri A., Abi Khalil C., Al-Shakaki A., Chidiac O., Stadler D., Zirie M., Jayyousi A., Salit J., Mezey J. , Crystal R., Rodriguez-Flores J. 2016. The Qatar genome: a population-specific tool for precision medicine in the Middle East. **Human Genome Variation** 3:16016, PMID: 27408750.

- *Editorial article in **Nature Middle East** Qatari genomes provide a reference for the Middle East*

3. O’Beirne S., Salit J., Rodriguez-Flores J., Staudt M., Abi Khalil C., Fakhro K., Robay A., Ramstetter M., Al-Azwani I., Malek J., Zirie M., Jayyousi A., Badii R., Al-Nabet Al-Marri A., Chiuchiolo M., Al-Shakaki A., Chidiac O., Gharbiah M., Bener A., Stadler D., Hackett N., Mezey J., Crystal R. 2016. Type 2 Diabetes Risk Allele Loci in the Qatari Population. **PLoS One** 11:e0156834, PMID: 27383215.

4. Pagovich O., Wang B., Chiuchiolo M., Kaminsky S., Sondhi D., Jose C., Price C., Brooks S., Mezey J., Crystal R. 2016. Anti-hIgE gene therapy of peanut-induced anaphylaxis in a humanized murine model of peanut allergy. **Journal of Allergy and Clinical Immunology** [Epub ahead of print] PMID: 27372563.

5. Harvey B., Strulovici-Barel Y., Kaner R., Sanders A, Vincent T., Mezey J., Crystal R. 2016. Progression to COPD in smokers with normal spirometry/low DLCO using different methods to determine normal levels. **European Respiratory Journal** 47:1888-1889, PMID: 27246083.

6. Strulovici-Barel Y., Shaykhiev R., Salit J., Deeb R., Krause A., Kaner R., Vincent T., Agosto-Perez F., Wang G., Hollmann C., Shanmugam V., Almulla A., Sattar H., Mahmoud M., Mezey J., Gross S., Staudt M., Walters M., Crystal R. 2016 Pulmonary Abnormalities in Young, Light-Use Waterpipe (Hookah) Smokers. **American Journal of Respiratory and Critical Care Medicine** 194:587-595, PMID: 27007171.

7. Zhou H., Brekman A., Zuo W., Ou X., Shaykhiev R., Agosto-Perez F., Wang R., Walters M., Salit J., Strulovici-Barel Y., Staudt M., Kaner R., Mezey J., Crystal R., Wang G. 2016. POU2AF1 Functions in the Human Airway Epithelium To Regulate Expression of Host Defense Genes. **Journal of Immunology** 196:3159-3167, PMID: 26927796.

8: Crowell S., Korniliev P., Falco A., Ismail A., Gregorio G, Mezey J., McCouch S. Genome-wide association and high-resolution phenotyping link *Oryza sativa* panicle traits to numerous trait-specific QTL clusters. **Nature Communications** 7:10527, PMID 26841834.

- 9: Tilley A., Staudt M., Salit J., Van de Graaf B., Strulovici-Barel Y., Kaner R., Vincent T., Agosto-Perez F., Mezey J., Raby B., Crystal R. 2016. Cigarette Smoking Induces Changes in Airway Epithelial Expression of Genes Associated with Monogenic Lung Disorders. **American Journal of Respiratory and Critical Care Medicine** 193:215-217, PMID: 26771416.
10. Kang H., Wang Y., Peng S., Zhang Y., Xiao Y., Wang D., Qu S., Li Z., Yan S., Wang Z., Liu W., Ning Y., Korniliev P., Leung H., Mezey J., McCouch S., Wang G. 2016. Dissection of the genetic architecture of rice resistance to the blast fungus *Magnaporthe oryzae*. **Molecular Plant Pathology** 17:959-735, PMID: 26574735.
11. Harvey B., Strulovici-Barel Y., Kaner R., Sanders A., Vincent T., Mezey J., Crystal R. 2015. Risk of COPD with obstruction in active smokers with normal spirometry and reduced diffusion capacity. **European Respiratory Journal** PMID: 26541521.
12. Fakhro K., Yousri N., Rodriguez-Flores J., Robay A., Staudt M., Agosto-Perez F., Salit J., Malek J., Suhre K., Jayyousi A., Zirie M., Stadler D., Mezey J., Crystal R. 2015. Copy number variations in the genome of the Qatari population. **BMC Genomics** 16:834, PMID: 26490036.
13. Wang G., Wang R., Strulovici-Barel Y., Salit J., Staudt M., Ahmed J., Tilley A., Yee-Levin J., Hollmann C., Harvey B., Kaner R., Mezey J., Sridhar S., Pillai S., Hilton H., Wolff G., Bitter H., Visvanathan S., Fine J., Stevenson C., Crystal R. Persistence of smoking-induced dysregulation of miRNA expression in the small airway epithelium despite smoking cessation. **PLoS One** 10:e0120824, PMID: 25886353.
14. Staudt M., Buro-Auriemma L., Walters M., Salit J., Vincent T., Shaykhiev R., Mezey J., Tilley A., Kaner R., Ho M., Crystal R. 2014. Airway basal stem / progenitor cells have diminished capacity to regenerate airway epithelium in chronic obstructive pulmonary disease. **American Journal of Respiratory and Critical Care Medicine** 190:955-958, PMID: 25317467.
15. Walters M., De B., Salit J., Buro-Auriemma L., Wilson T., Rogalski A., Lief L., Hackett N., Staudt M., Tilley A., Harvey B., Kaner R., Mezey J., Ashbridge B., Moore M., Crystal R. 2014. Smoking accelerates aging of the small airway epithelium. **Respiratory Research** 15:94, PMID 25248511.
16. Lis R, Touboul C, Halabi N, Madduri A, Querleu D, Mezey J., Malek J, Suhre K, Rafii A. 2014. Mesenchymal cell interaction with ovarian cancer cells induces a background dependent prometastatic transcriptomic profile. **Journal of Translational Medicine** 12:59, PMID: 24597747.
17. Ryan D, Vincent T, Salit J, Walters M, Agosto-Perez F, Shaykhiev R, Strulovici-Barel Y, Downey R, Buro-Auriemma L, Staudt M, Hackett N, Mezey J., Crystal R. 2014. Smoking dysregulates the human airway basal cell transcriptome at COPD risk locus 19q13.2. **PLoS ONE** 9:e88051, PubMed PMID: 24498427.
18. Reardon B., Hansen J., Crystal R., Houston D., Kritchevsky S., Harris T., Lohman K., Liu Y., O'Connor G., Wilk J., Mezey J., Gao C., Cassano P. 2013 Vitamin D-responsive SGPP2 variants

associated with lung cell expression and lung function. **BMC Medical Genetics** 14:122, PMID: 24274704.

19. Abou Ziki M., Strulovici-Barel Y., Hackett N., Rodriguez-Flores J., Mezey J., Salit J., Radisch S., Hollmann C., Chouchane L., Malek J., Zirie M., Jayyuosi A., Gotto A., Crystal R. 2014 Prevalence of the Apolipoprotein E Arg145Cys Dyslipidemia At-Risk Polymorphism in African-Derived Populations. **American Journal of Cardiology** 113:302-308, PMID: 24239320.

20. Goldstein O., Mezey J., Schweitzer P., Boyko A., Gao C., Bustamante C., Jordan J., Aguirre G., Acland G. 2013 IQCB1 and PDE6B mutations cause similar early onset retinal degenerations in two closely related terrier dog breeds. **Investigative Ophthalmology and Visual Science** 54:7005-7019, PMID: 24045995.

21. Harvey B., Strulovici-Barel Y., Vincent T., Mezey J., Raviram R., Gordon C., Salit J., Tilley A., Chung A., Sanders A., Crystal R. 2013 High correlation of the response of upper and lower lobe small airway epithelium to smoking. **PLoS One** 8:e72669, PMID: 24039793.

22. Orlin A., Sondhi D., Witmer M., Wessel M., Mezey J., Kaminsky S., Hackett N., Yohay K., Kosofsky B., Souweidane M., Kaplitt M., D'Amico D., Crystal R., Kiss S. 2013 Spectrum of ocular manifestations in CLN2-associated batten (Jansky-Bielschowsky) disease correlate with advancing age and deteriorating neurological function. **PLoS One** 8:e73128, PMID: 24015292.

23. Agler A., Crystal R., Mezey J., Fuller J., Gao C., Hansen J., Cassano P. 2013 Differential expression of vitamin e and selenium-responsive genes by disease severity in chronic obstructive pulmonary disease. **COPD** 10:450-458, PMID: 23875740.

24. Kaminsky S., Quach L., Chen S., Pierre-Destine L., Van de Graaf B., Monette S., Rosenberg J., De B., Sondhi D., Hackett N., Mezey J., Rosengart T., Crystal R. 2013. Safety of direct cardiac administration of AdVEGF-All6A+, a replication-deficient adenovirus vector cDNA/genomic hybrid expressing all three major isoforms of human Vascular Endothelial Growth Factor, to the Ischemic Myocardium of Rats. **Human Gene Therapy Clinical Development** 24:38-46, PMID: 23692382.

25. Fukui T., Shaykhiev R., Agosto-Perez F., Mezey J., Downey R., Travis W., Crystal R. 2013. Lung adenocarcinoma subtypes based on expression of human airway basal cell genes. **European Respiratory Journal** 42:1332-1344, PMID: 23645403.

26. Brisbin A., Bryc K., Byrnes J., Zakharia F., Omberg L., Degenhardt J., Reynolds A., Ostler H., Mezey J., Bustamante CD. 2012 PCAdmix: principal components-based assignment of ancestry along each chromosome in individuals with admixed ancestry from two or more populations. **Human Biology** 84:343-364, PMID: 23249312.

27. Wang R., Ahmed J., Wang G., Hassan I., Strulovici-Barel Y., Salit J., Mezey J., Crystal R. 2012 Airway epithelial expression of TLR5 is down regulated in healthy smokers and smokers with chronic obstructive pulmonary disease. **The Journal of Immunology** 189:2217-2225, PMID: 22855713.

28. Makvandi-Nejad S., Hoffman G., Allen J., Chu E., Gu E., Chandler A., Loreda A., Bellone R., Mezey J., Brooks S., Sutter N. 2012. Four loci explain 83% of size variation in the horse. **PLoS One** 7:e39929, PMID 22808074.
29. Wang G., Xu Z., Wang R., Ai-Hijji M., Salit J., Stulovici-Barel Y., Tilley A., Mezey J., Crystal G. 2012. Genes associated with MUCAC expression in small airway epithelium of human smokers and non-smokers. **BMC Medical Genomics** 5:21, PMID 22676183.
30. Jarvis J., Scheinfeldt L., Soi S., Lambert C., Omberg L., Ferwerda B., Bodo J-M., Beggs W., Hoffman G., Mezey J., Tishkoff S. 2012. Signatures of natural selection and genetic association with stature in west African pygmies. **PLoS Genetics** 8:e1002641, PMID: 22570615.
31. Rosenberg J., Hicks M., De B., Pagovich O., Frenk E., Janda K., Wee S., Koob G., Hackett N., Kaminsky S., Worgall S., Tignor N., Mezey J., Crystal R. 2012. AAVrh.10-mediated expression of an anti-cocaine antibody mediates persistent passive immunization that suppresses cocaine-induced behavior. **Human Gene Therapy** 23:451-459, PMID: 22486244.
32. Hackett N., Butler M., Shaykhiev R., Salit J., Omberg L., Rodriguez-Flores J., Mezey J., Strulovici-Barel Y., Wang G., Didon L., Crystal R. 2012. RNA-Seq quantification of the human small airway epithelium transcriptome. **BMC Genomics** 13:82, PMID 22375630.
33. Zhao K., Tung C-W., Wright M., Eizenga G., McClung A., Price A., Mezey J., Reynolds A., Liakat A., Bustamante C., McCouch S. 2011. Genome-wide association mapping of complex traits in rice. **Nature Communications** 2:467, PMID: 21915109.
34. Tilley A., O'Connor T., Hackett N., Strulovici-Barel Y., Salit J., Amoroso N., Zhou K., Raman T., Clark A., Mezey J., Crystal R. 2011. Biologic categorization of healthy nonsmokers, healthy smokers and smokers with COPD based on the transcriptome of the small airway epithelium. **PLoS One** 6:e22798, PMID: 21829517.
35. Mao, Y., Kiss S., Hackett N., Qiu J., Carbone A., Mezey J., Kaminsky S., D'Amico D., Crystal R., 2011. Persistent suppression of ocular neovascularization with intravitreal administration of AAVrh.10 coding for bevacizumab. **Human Gene Therapy** 22:1525-1535, PMID: 21801028.
-Featured article in *Human Gene Therapy*
36. Godron C., Gudi K., Krause A., Sackrowitz R., Harvey B-G, Strulovici-Barel Y., Mezey J., Crystal R. 2011. Circulating endothelial microparticles as a measure of early lung destruction in cigarette smokers. **American Journal of Respiratory and Critical Care Medicine** 184:224-232, PMID: 21471087.
- Editorial article in *Am J Respir Crit Care Med.* 184:154-155: *Endothelial Chronic Destructive Pulmonary Disease (E-CDPD): Is Endothelial Apoptosis a Subphenotype or Prequel to COPD?*.
37. Butler M., Hackett N., Salit J., Strulovici-Barel Y., Omberg L., Mezey J., Crystal R. 2011. Glutathione S-transferase copy number variation alters lung gene expression. **European Respiratory Journal** 38:15-28, PMID: 21349909.

38. Butler M., Fukui T, Salit J., Shaykhiev R., Mezey J., Hackett N., Crystal R. 2010. Modulation of Cystatin A expression in the human small airway epithelium by genotype, smoking, and COPD. **Cancer Research** 71:2572-2581, PMID: 21325429.
39. Hicks M., De B., Rosenberg J., Davidson J., Moreno A., Janda K., Wee S., Koob G., Hackett N., Kaminsky S., Worgall S., Toth M., Mezey J., Crystal R. 2010. Cocaine analog conjugated to disrupted E1-E3- adenovirus - a small molecule / viral protein vaccine strategy to evoke high-titer immunity against non-immunogenic addictive drugs. **Molecular Therapy** 19:612-619, PMID: 21206484.
- *Press coverage in Bloomberg (online), CNN (online), Time (online), and others*
40. Goldstein O., Mezey J., Boyko A., Gao C., Wang W., Bustamante C., Anguish L., Jordan J., Pearce-Kelling S., Aguirre G., Acland G. 2010. ADAM9 mutation in canine cone-rod dystrophy 3 (crd3) establishes homology with human CORD9. **Molecular Vision** 16:1549-1569, PMID: 20806078.
41. Strulovici-Barel Y., Omberg L., O'Mahony M., Gordon C., Hollman C., Tilley A., Salit J., Mezey J., Harvey B.-G., Crystal R. 2010. Threshold of biologic response of the small airway epithelium to low levels of tobacco smoke. **American Journal of Respiratory and Critical Care Medicine** 182:1524-1532, PMID: 20693378.
- *Press coverage in Time (online), LA Times (online), US News and World Report (online), MSN.com, CNN.com and others*
42. Turetz M., O'Connor T., Tilley A., Strulovici-Barel Y., Salit J., Dang D., Teater M., Mezey J., Clark A., Crystal R. 2010. The trachea epithelium as a canary for cigarette smoking-induced biologic phenotype of the small airway epithelium. **Clinical and Translational Science** 2:260-272, PMID: 20443905.
43. Brooks S., Gabreski N., Miller D., Brisbin A., Brown H., Streeter C., Mezey J., Antczak D. 2010. Whole genome SNP association in the horse: identification of a deletion in myosin va responsible for lavender foal syndrome using the equine SNP50 genotyping platform. **PLoS Genetics** 6:e1000909, PMID: 20419149.
44. Brooks M., Etter K., Catalfano J., Bustamante C., Mezey J. 2010. A genome-wide linkage scan in German shepherd dogs localizes canine platelet procoagulant deficiency (Scott Syndrome) to canine chromosome 27. **Gene** 450:70-75, PMID: 19854246.
45. Hubner R., Schwartz P., Bishnu P., Ferris B., Omberg L., Mezey J., Hackett N., Crystal R. 2009. Coordinate control of expression of Nrf2-modulated genes in the human small airway epithelium highly responsive to cigarette smoking. **Molecular Medicine** 15:203-219, PMID: 19593404.
- *Featured article in Molecular Medicine podcast.*
46. Casey B., Glatt C., Tottenham N., Soliman F., Bath K., Amso D., Altemus M., Pattwell S., Jones R. Levita L., McEwen B., Magarinos A., Gunnar M., Thomas K., Mezey J., Clark A., Hempstead B., Lee F. 2009. BDNF as a model system for examining gene by environment interac-

tions across development. **Neuroscience** 164:108-120, PMID: 19358879.

47. Castelhana M., Acland G, Ciccone P., Corey E., Mezey J., Page R., Schimenti J. Todhunter R. 2009. Development and use of DNA archives at veterinary teaching hospital to investigate the genetic basis of disease. **Journal of the American Veterinary Medical Association** 234:75-80, PMID: 19119968.

48. Mezey J., Nuzhdin S., Ye F., Jones C. 2008. Coordinated evolution of co-expressed gene clusters in the Drosophila transcriptome. **BMC Evolutionary Biology** 8:2, PMID: 18179715.

49. Holloway A., Lawniczak M., Mezey J., Begun D., Jones C. 2007. Adaptive gene expression divergence inferred from population genomics. **PLoS Genetics** 3:2007-2013, PMID: 17967066.

50. Kim T-S., Logsdon B., Park S., Mezey J., Lee K.. 2007. Quantitative trait loci for circadian clock identified in *Neurospora crassa*. **Genetics** 177:2335-2347, PMID: 17947430 .

51. Zelditch M., Mezey J., Sheets H., Lundrigan B., Garland T. 2006. Developmental regulation of skull morphology II: ontogenetic dynamics of covariance. **Evolution and Development** 8:46-60, PMID: 16409382.

52. Mezey J. 2006. Modularity. Fox, C.W. and J.B. Wolf (eds.) *Evolutionary Genetics: Concepts and Case Studies*. Oxford University Press.

53. Mezey J., Houle D. 2005. The dimensionality of genetic variation for wing shape in *Drosophila melanogaster*. **Evolution** 59:1027-1038, PMID: 16136802.

54. Hahn M., Mezey J., Begun D., Gillespie J., Kern A., Langley C., Moyle L. 2005. Evolutionary genomics: codon bias and selection on single genomes. **Nature** 433:E5, PMID: 15662370.

55. Mezey J., Houle D., Nuzhdin S. 2005. Naturally segregating QTL affecting wing shape of *Drosophila melanogaster*. **Genetics** 169:2101-2113, PMID: 15520257.

56. Wagner G., Mezey J., Callabretta R. 2005. Natural selection and the origin of modules. W. Callebaut and D. Rasking-Gutman (eds.) *Modularity: Understanding the Development and Evolution of Natural Complex Systems*. MIT Press.

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63. Mezey J., Cheverud, J. Wagner G. 2000. Is the genotype-phenotype map modular? An approach using quantitative trait locus (QTL) data. **Genetics** 156:305-311, PMID: 10978294.
64. Wagner G., Mezey J. 2000. Modeling the evolution of genetic architecture: a continuum of alleles model with pairwise AxA epistasis. **Journal of Theoretical Biology** 203:163-175, PMID: 10704300.
65. Mezey J., Wagner G. 2000. An effect of scale in a non-additive genetic model. Y. Bar-Yam (ed.) *Unifying Themes in Complex Systems: Proceedings of the First International Conference on Complex Systems*. Perseus Books Group.
66. Kim C., Kawasaki K., Minoshima S., Amemiya C., Miller W., Shimizu N., Bailey W., Wagner G., Mezey J., Ruddle F. 2000. Hox cluster duplication in the horn shark (*Heterodontus francisi*) and the vertebrate radiation. **Proceedings of the National Academy of Sciences** 97:1655-1660, PMID: 10677514.

7 Graduate Students and Research Personnel

Current Abishek Sainath 2011- Graduate Student in Physiology, Biophysics, and Systems Biology Program; Francisco Agosto-Perez 2011- Programmer; Monica Ramstetter 2012- Graduate Student in Computational Biology (NSF Graduate Research Fellowship, Cornell Presidential Life Sciences Fellowship); Sarah Brooks 2012- Graduate Student in the Tri-Institutional Training Program in Computational Biology and Medicine; Mark Spurgeon 2012- Graduate Student in Physiology, Biophysics, and Systems Biology Program; Sushila Shenoy 2013- Postdoctoral Associate; Jin-Hyun Ju 2013- Graduate Student in Physiology, Biophysics, and Systems Biology Program; Afrah Shafquat 2015- Graduate Student in Computational Biology; Zijun Zhao 2016- Graduate Student in Physiology, Biophysics, and Systems Biology Program.

Alumni Thomas Vincent 2012-2014, Postdoctoral Associate (Current: Data Scientist, Digital Ocean); Yuxin Shi 2009-2015, Laboratory Technician (Current: Database Programmer, Cornell University); Pavel Korniliev 2009-2014, Programmer (Current: Research Programmer, Cornell University); Nicole Tignor 2012-2013, Postdoctoral Associate (Current: Senior Research Scientist, Institute for Genomics and Systems Biology); Juan Rodriguez-Flores 2010-2013 Postdoctoral Associate (Current: Assistant Professor, Weill Cornell Medical College); Gabriel Hoffman 2008-2013, Graduate Student, Ph.D. in Genetics and Development (Current: Assistant Professor, Institute for Genomics and Multiscale Biology, Mount Sinai Hospital); Anthony Greenberg 2011-2012, Postdoctoral Associate (Current: Founder and CEO, Bayesic Inc.); Rami Mahdi 2010-2012, Postdoctoral

Associate (Current: Senior Data Scientist, Facebook); Larsson Omberg 2008-2011, Postdoctoral Associate (Current: Senior Research Scientist, Sage Bionetworks); Chuan Gao 2007-2012, Graduate Student, Ph.D. in Computational Biology (Current: Postdoctoral Associate, Duke University); Benjamin Logsdon 2007-2010, Graduate Student, Ph.D. in Computational Biology (Current: Research Scientist, Sage Bionetworks); Abra Brisbin 2006-2010, Graduate Student, Ph.D. in Applied Mathematics (Current: Assistant Professor, University of Wisconsin-Eau Claire), Gerry Lorigan, Graduate Student, M.S. in Genetics and Development; Fangfei Ye 2006-2009, Laboratory Technician (Current: Laboratory Technician, Genome Sequencing and Analysis Core, Duke University).

8 Teaching

8.1 BTRY 4830/6830; Quantitative Genomics and Genetics

Spring 2006-Spring 2011, Fall 2012-2014; Spring 2015-2017; A rigorous introduction to quantitative genomics aimed at both undergraduates and graduate students in biological and quantitative biological fields (4 credits). Simultaneously taught on both the Cornell, Ithaca campus and the Weill Cornell Medical College campus by video-conference 40+ students per semester.

8.2 BTRY 7210; Topics in Quantitative Genomics

Fall 2007-Fall 2011, Spring 2014; A seminar course aimed at graduate students (1 credit).

8.3 Lecture Blocks

Fall 2010-Fall 2011; Introduction to the Bioinformatics (Cornell). Fall 2013-2015; Quantitative Understanding in Biology. Fall 2014-2016; Introduction to Computational Systems Biology. Fall 2014; Essential Principles of Medicine (Weill Medical Student Core).

9 Cornell Service

9.1 Field Membership

Applied Mathematics; Computational Biology; Epidemiology; Genomics; Physiology, Biophysics, and Systems Biology; Statistics; Tri-Institutional Program in Computational Biology and Medicine. *Previous:* Biometry; Genetics, Genomics, and Development;

9.2 Graduate Student Committees

Pradeep Ambrose (Physiology, Biophysics, and Systems Biology); Nickolas Cheney (Computational Biology); Dhruva Chandramohan (Physiology, Biophysics, and Systems Biology); Hong Chen (Nutrition); Natalie Davidson (CBM Tri-Institutional Training Program); Lauren Fairchild (CBM Tri-Institutional Training Program); Stephanie Hyland (CBM Tri-Institutional Training Program); Karl Kremling (Plant Breeding); Neel Madhukar (CBM Tri-Institutional Training Program); Arielle Messer (Genetics, Genomics, and Development); Charles Murphy (Physiology, Biophysics, and Systems Biology); Uche Okeke (Plant Breeding); Heng Pan (Physiology, Biophysics, and Systems Biology); Ying Qiao (Computational Biology); David Redmond (Physiology, Biophysics, and Systems

Biology); Alberto Romero (Plant Breeding and Genetics); Han Yuan (CBM Tri-Institutional Training Program); Max Bernstein (Center for Genomics and Systems Biology, New York University - Graduated 2016); Mark Carty (CBM Tri-Institutional Training Program - Graduated 2016); Julia Goodrich (Genetics and Development - Graduated 2016); Darryl Reeves (CBM Tri-Institutional Training Program - Graduated 2016); Nicolas Santantonio (Plant Breeding - Graduated 2016); Keegan Kelsey (Genetics and Development - Graduated 2015); Mohammed Abri (Animal Breeding - Graduated 2015); Irina Gaynanova (Statistics - Graduated 2015); Amanda Guo (Genetics and Development - Graduated 2015); Michael Levine (Physiology, Biophysics, and Systems Biology - Graduated 2015); Matthew Teater (Physiology, Biophysics, and Systems Biology - Graduated 2015); Giovanna Danies Turano (Plant Pathology - Graduated 2015); Kaixiong Ye (Nutrition - Graduated 2014); Sheng Li (Physiology, Biophysics, and Systems Biology - Graduated 2014); Tara Baxter (Genetics, Genomics, and Development - Graduated 2014); Diana Chang (CBM Tri-Institutional Training Program - Graduated 2014); Haley Hunter-Zinck (CBM Tri-Institutional Training Program - Graduated 2014); Nyasha Chambwe (Physiology, Biophysics, and Systems Biology - Graduated 2014); Heather Holl (Animal Science - Graduated 2014); Nicolas Heslot (Plant Breeding and Genetics - Graduated 2013); Joyanna Gilmour (Nutrition - Graduated 2013); Brooke LaFlamme (Genetics and Development - Graduated 2012); Xu Wang (Genetics and Development - Graduated 2011); Anne Angler (Epidemiology - Graduated 2010); Adam Diehl (Genetics and Development - Graduated 2010); Eimear Kenny (CBM Tri-Institutional Program - Graduated 2010); Kirk Lohmueller (Genetics and Development - Graduated 2009).

9.3 Faculty Search Committees

Department Chair of Biological Statistics and Computational Biology (2014-2015); Department of Statistics (2011, 2013); Department of Biological Statistics and Computational Biology (2009, 2011, 2013); Weill Institute for Cell and Molecular Biology (2009); Department of Animal Science (2008); Cornell University's College of Agriculture and Life Sciences New York State Agricultural Experiment Station (2008).

9.4 Faculty Advisor

CURRENT: Reed Fratt (20), Joshua Jeon (20), Sheng Qian (20), Shaelyn Bauchens (19), Nicholas Hartman (19), Connor Ostrander (19), Amanda Shuster (19), Ge Wang (19), Vindhya Rao (19), Adam Zaghouni (19), Jason Chen (19), Yuhuan Qiu (19); Rebecca Miller (19); Mikaela Bloomberg (18), Maxwell Lee (18), Karalyn Pappas (18), Cameron Curtin (18), Katherine Zhu (18), Gerald Eggleston (17), James Gallagher (17), William Mansmann (17); *GRADUATED*: Nikolaus Salvatore (16), Yin Wang (16), Jared Welling (16), Sachin Rudraraju (16), Zhaoxin Wen (16), Adam Hirsch (16), Jonathan Fine (15); Tyler Kerbis (15), Sam Rubenstein (15), Shimul Sheth (15), Rachel Gerber (14), Ratish Malhotra (14), Eric Bellin (14), Cristina DeFillippis (14), Christopher Hwu (14), Renee Setter (13), Tongxin Liu (13), Alexander Gileta (13), Matthew Langer (13), Jordan Goldstein (13), Shanwenyi He (13), Penelope Hobbs (13), Julian Homburger (13), Michael Doliner (13), Jeffrey Spence (13), Mark Tai (13), Caroline Clayton-Stamm (12), Katerina Daveynis (11), Andrew Debevec (11), Christopher Giuliano (11), Michael Jureller (11), Jeffrey Petracca (11), Samuel Tidman (11), Justin Cohen (10), Aviva Mail (10), Daisey Lee (09), Linda Jaffee (08); *TEMPORARY*: Sarah Kimball, Leanna Caloras, Alice Chou, Hee Jin Cheon, Carlo De Los Angeles, Michael Ernst, Shelby Gainey, Lahna Greene, Jamie Seth Hanfling, Daniel Jaret, Leyda Melendez,

Alburuj Rahman, McKenzie Ritter, Denise Robbins, Shuo Shan, Wilson Sui, Olivia Wherry, Emily Wessling.

9.5 Cornell Committees

Director of Graduate Studies for the Graduate Field of Computational Biology (2014-); Cornell Computational Biology Admissions Committee (2015-); Cornell Computational Biology Executive Committee (2016-); Computational Biology and Medicine Tri-Institutional Training Program Curriculum Committee (2014-); Computational Biology and Medicine Tri-Institutional Training Program Oversight Committee (2015-); Computational Biology and Medicine Tri-Institutional Training Program Executive Committee (2015-); Weill Scientific Computing Advisory Group (2015-); Weill Cornell NYS Tech Campus Executive Committee (2012-2015); Cornell Center for Comparative and Population Genomics (3CPG) Fellowship Committee (2012-2014); Bio-IT Advisory Board (2012-2015); Tri-Institutional Program in Computational Biology and Medicine Graduate Admissions Committee (2011-2014); Cornell Center for Comparative and Population Genomics (3CPG) Priming Grant Committee (2011-2014); BSCB Laboratory Renovation Committee (2013-2014); Weill Cornell Belfar IT Planning Committee (2013-2014); Weill Cornell Medical College Genetics and Genomics Workgroup (2013); Weill Cornell NYS Tech Campus Committee (2012-2013); CALS NYC Tech campus committee (2012-2013); Weill Cornell Research Information Technology Liaison Committee (2012-2013); Physiology, Biophysics, and Systems Biology Graduate Field Admissions Committee (2012); CALS tenure promotion committee (2012); Faculty Advisory Board for Information Technologies (2011- 2012), Veterinary College Biobank Oversight Committee (2008-2010); Biology Curriculum Transition Committee (2008-2009); CALS Curriculum Committee (2008-2009); Center for Vertebrate Genomics (CVG) Seed Grant Committee (2008); Center for Vertebrate Genomics (CVG) Scholarship Committee (2008).

10 Review Service

10.1 NIH Review Panels

Special Emphasis Panel/Scientific Review Group - Genes, Genomes, and Genetics (Clinical Studies of Mental Illness) [R01] 2016; Small Research Grants for Data Analysis and Statistical Methodology Applied to Genome-wide Data [R03] (National Institute of Dental and Craniofacial Research) 2013, 2014(x2); Advanced Genomic Data Analysis and Visualization Methods for TCGA Data [R21] (National Cancer Institute) 2008.

10.2 NSF Review Panels

Mathematical Biology and Statistics Program (Division of Mathematical Sciences) 2011; Big Data Health and Healthcare Panel (Big Data Research Initiative) 2014

10.3 International Grant Review Panels

The Research Council of Oman 2013; The Icelandic Research Fund 2013.

10.4 Editorial Boards and Reviewer

Pacific Symposium on Biocomputing 2011; International Conference on Intelligent Systems for Molecular Biology (ISMB) 2009, 2010; Journal of Evolutionary Biology 2006-2011.

10.5 Journals (ad hoc)

American Naturalist; Bioinformatics; BMC Bioinformatics; BMC Genetics; BMC Genomics; Cell Systems; Ecology; Ecology Letters; Evolution; Gene; Genetical Research; Genetics; Genome Biology; Genome Research; Heredity; IEEE/ACM Transactions on Computational Biology and Bioinformatics; Journal of the American Statistical Association; Journal of Experimental Zoology; Nature; Nature Reviews Genetics; Molecular Biology and Evolution; PLoS Computational Biology; PLoS Genetics; PLoS ONE; Proceedings of the National Academy of Sciences; Theoretical and Applied Genetics.

11 Invited Seminars and Courses (last 5 years)

Rutgers University (Department of Genetics) December 2016; Medidata Solutions, Inc. (Scientific Advisory Board) November 2016; The Jackson Laboratory (Short Course on Systems Genetics) October 2016; Joint Statistical Meetings (Inference of Network Structures) August 2016; Institute for Genomics and Multiscale Biology at Icahn School of Medicine at Mount Sinai (Computational Genomics Seminar Series) March 2016; The Jackson Laboratory (Short Course on Systems Genetics) October 2015; Medidata Solutions, Inc. (Scientific Advisory Board) August 2015, IBM Thomas J. Watson Research Center (Computational Biology Center) June 2013; Cornell University Statistics Seminar (Field Seminar Series) October 2012; Weill Cornell Medical College (Faculty Seminar Series) February 2012; International Chinese Statistical Association (Statistics in Biosciences Session) June 2012; Purdue University (Statistical Bioinformatics Seminar) October 2011; Quantitative Biology and Bioinformatics in Modern Medicine Conference (Dublin) February 2011; Michigan State University (Science at the Edge Series) September 2011.